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10/803,875	03/19/2004	Yukiko Sakai	1095.1306	7164

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EXAMINER	
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ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/803,875	SAKAI ET AL.	
	Examiner	Art Unit	
	Shi K. Li	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5,7,9-12,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3, 5, 7, 9-12 and 19-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/13/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 3, 5, 7, 9-12 and 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "said wavelength multiplex/demultiplex unit further comprising an OSC filter through which separation or insertion of an OSC signal for maintenance control is performed comprising:

in transmitting the wavelength-multiplexed signal containing main signals in n channels arranged in a wavelength range and the OSC signal, comprising:

when the optical filter #k ($2 \leq k \leq n$) receives a signal in the channel number k at a predetermined wavelength from an inside of the optical transmission device, the optical filter #k allows the signal in the channel number k to pass through the optical filter #k, reflects the signals in the channel numbers k+1, k+2, …, n sent from the optical filters #k+l, #k+2, ..., #n and sends the signals in the channel numbers k, k+l, k+2, …, n to the optical filter #(k-1),

when the optical filter #1 receives a signal in the channel number l, the optical filter #1 allows the signal in the channel number 1 to pass through the optical filter #l, reflects the signals in the channel numbers 2, 3, ..., k, ..., n sent from the optical filters #2, #3, ..., #k, …, #n and sends the main signals in the channel numbers l, …, n to the OSC filter, and

when the OSC filter receives the main signals in the channel numbers 1, ..., n, the OSC filter allows the main signals sent from the optical filter #1 to pass through, the OSC filter and reflects the OSC signal that is generated by an inside unit of the optical transmission device, so that the main signals and the OSC signal are multiplexed to generate the wavelength-multiplexed signal that is transmitted through the WDM port, and

in receiving the wavelength-multiplexed signal containing main signals in n channels arranged in a wavelength range and the OSC signal, comprising:

when the OSC filter receives the wavelength-multiplexed signal entered through the WDM port, the OSC filter reflects the OSC signal to monitor, allows the main signals to pass through the OSC filter and sends the main signals to the optical filter #1,

when the optical filter #1 receives the main signals, the optical filter #1 allows main signals in only one of the channels at a predetermined wavelength to pass through the optical filter #1, and reflects the remaining main signals in the other (n-1) channels, and

when the optical filter #k ($2 \leq k \leq n$) receives the reflected main signal in the (n-(k-1)) channels, the optical filter #k allows main signals in only one of the (n-(k-1)) .....channels at another predetermined wavelength to pass through the optical filter #k and reflects the remaining main signals in the other (n-(k-1)-1) channels, so that main signals in the channels at predetermined wavelengths are demultiplexed."

It is unclear whether the above limitations are steps of a procedure or functions of means. In case they are steps of a procedure, the Applicant is reminded that claim which is intended to embrace both apparatus and method is precluded by language of 35 U.S.C 101, which set forth statutory classes of invention in alternative only, and is also invalid under 35 U.S.C. 112, second

paragraph, since claim which purports to be both method and apparatus is ambiguous and therefore does not particularly point out and distinctly claim subject matter of invention. See Ex parte Lyell, 17 USPQ2d 1548 (Bd. PA&I. 1990).

In case that they are functions of means, the Applicant is reminded that it is recommended to use the phrase "means for" to present limitations which are intended to be interpreted by 35 U.S.C. 112 sixth paragraph.

Similarly, claims 5 and 19 contains limitations whose interpretations are unclear whether they are steps of a procedure or functions of means.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (EP 0 153 722 A2) in view of Zhang (U.S. Patent 6,937,809 B1) and Persson et al. (U.S. Patent 7,110,673 B2).

Regarding claim 1, Tamura et al. discloses in FIG. 5 a hybrid optical wavelength division multiplexer-demultiplexer for transmission and reception of wavelength division multiplexed (WDM) signal. The multiplexer-demultiplexer comprises a plurality of optical filters 34a, 34b, 34c and 34d. The difference between Tamura et al. and the claimed invention is that Tamura et al. does not teach equalizing the power level of the channels. Zhang teaches in FIG. 1 a wavelength multiplexer with variable optical attenuation. One of ordinary skill in the art would

have been motivated to combine the teaching of Zhang with the multiplexer/demultiplexer of Tamura et al. because equalization gives each channels the same performance. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use attenuators for equalizing the power level of the channels, as taught by Zhang, in the multiplexer/demultiplexer of Tamura et al. because equalization gives each channel the same performance.

The combination of Tamura et al. and Zhang still fails to teach an OSC filter. Persson et al. teaches FIG. 2 an OSC filter 100 for separating OSC channel and the WDM channels. One of ordinary skill in the art would have been motivated to combine the teaching of Persson et al. with the modified multiplexer/demultiplexer of Tamura et al. and Zhang because an OSC channel provides information for signaling and management information for the WDM signals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an OSC channel and use an OSC filter, as taught by Persson et al., in the modified multiplexer/demultiplexer of Tamura et al. and Zhang because an OSC channel provides information for signaling and management information for the WDM signals.

Regarding claim 5, Tamura et al. teaches in FIG. 7(a) multiplexer for multiplexing wavelength channels and in FIG. 7(b) demultiplexer for demultiplexing wavelength channels.

5. Claims 3, 7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al., Zhang and Persson et al. as applied to claim 1 and 5 above, and further in view of Persson (U.S. Patent 6,519,384 B2).

Tamura et al., Zhang and Persson et al. have been discussed above in regard to claims 1 and 5. Regarding claims 3 and 7, the difference between Tamura et al., Zhang and Persson et al.

and the claimed invention is that Tamura et al., Zhang and Persson et al. do not teach arranging the order of the filters to equalize the channel power level. Persson teaches in col. 2, line 10-17 that channels have the highest link losses are relayed through as few add/drop filter elements as possible. In particular, filter elements are arranged such that received channel wavelengths with a high link loss relative to an allowed link loss are dropped form said transmission medium upstream of received channel wavelengths with a low link loss relative to an allowed link loss. One of ordinary skill in the art would have been motivated to combine the teaching of Persson with the modified multiplexer/demultiplexer of Tamura et al., Zhang and Persson et al. because the approach of Persson reduces the likelihood of a small number of channels sustaining significantly higher losses than other channels and thus increases the overall possible transmission distance. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the filters as taught by Persson in the modified multiplexer/demultiplexer of Tamura et al., Zhang and Persson et al. because the approach of Persson reduce the likelihood of a small number of channels sustaining significantly higher losses than other channels and thus increases the overall possible transmission distance.

Regarding claims 9-12, Persson teaches in FIG. 1 that the channels are multiplexed at the sending side and demulitplexed at the receiving side. It is common sense that the compensation of the loss can be done totally in the sending side, totally in the receiving side or divided between the sending side and the receiving side, as long as the overall power levels for all the wavelength channel are equalized.

6. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (EP 0 153 722 A2) in view of Persson et al. (U.S. Patent 7,110,673 B2).

Regarding claims 19-20, Tamura et al. discloses in FIG. 5 a hybrid optical wavelength division multiplexer-demultiplexer for transmission and reception of wavelength division multiplexed (WDM) signal. The multiplexer-demultiplexer comprises a plurality of optical filters 34a, 34b, 34c and 34d. Tamura et al. teaches in FIG. 7(a) multiplexer for multiplexing wavelength channels and in FIG. 7(b) demultiplexer for demultiplexing wavelength channels. The difference between Tamura et al. and the claimed invention is that Tamura et al. does not teach an OSC filter. Persson et al. teaches FIG. 2 an OSC filter 100 for separating OSC channel and the WDM channels. One of ordinary skill in the art would have been motivated to combine the teaching of Persson et al. with the multiplexer/demultiplexer of Tamura et al. because an OSC channel provides information for signaling and management information for the WDM signals. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an OSC channel and use an OSC filter, as taught by Persson et al., in the multiplexer/demultiplexer of Tamura et al. because an OSC channel provides information for signaling and management information for the WDM signals.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 3, 5, 7, 9-12 and 19-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (7:30 a.m. - 4:30 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

skl
30 June 2008

/Shi K. Li/
Primary Examiner, Art Unit 2613